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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,580	04/26/2007	Chris Abbot	ABBO3004/FJD	4334
23364 7590 09/29/2011 BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314-1176				
EXAMINER MARCELO, MELVIN C				
ART UNIT 2463		PAPER NUMBER		
MAIL DATE 09/29/2011		DELIVERY MODE PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/585,580

Applicant(s)

ABBOT, CHRIS

Examiner

MELVIN MARCELO

Art Unit

2463

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 11, 15, 17, 18 and 21 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 11, 15, 17, 18 and 21 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 26 April 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-SB-005)
Paper No(s)/Mail Date ____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 6-30-2011 have been fully considered but they are not persuasive.

Applicant amended the claims to include a filter unit which filter the appropriate signals out and feed them to the field devices and a splitter in the signal line. However, filter units and splitters are obvious devices associated with DSL communications on pre-existing 2-wire copper telephone wiring (see Burkle et al. US 2004/0090985 A1, paragraphs 0005-0006 (existing 2-wire copper telephone wirings), paragraphs 0009-0010 (modifications of DSL that are splitter-less), paragraph 0035 (splitter for separating the telephone signal and the xDSL signal), and paragraphs 0094-0095 (Filtering NEXT/FEXT noise and RF interferes). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide filters and splitters on the pre-existing copper signal lines such as in Storm (US 5655841) copper HART bus (column 12, lines 34-64) in order to provide DSL communications as taught by Burkle.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 11, 15, 17, 18 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11, lines 3-4, still recites an example "e.g., according to the HART-standard." It is not clear whether the example provides a limitation to the claimed subject matter.

Claim 11, line 11, still recites in parenthesis "(smaller than 10,000 baud)." It is not clear whether the expression provides a limitation with respect to a low data transmission rate or is a mere example.

Applicant should clarify whether these phrases form limitations within their claimed subject matter.

Claims 15, 17, 18 and 21 depend on claim 11.

Claim 15, line 3, the signal line was amended to include "&E." It is not clear to the Examiner what is meant by &E. Applicant should clarify what is meant by "&E."

Also, claim 21 lacks a period.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 82 USPQ2d 1385, 1395-97 (2007) identified a number of rationales to support a conclusion of obviousness which are consistent with the proper "functional approach" to the

determination of obviousness as laid down in *Graham*. Exemplary rationales that may support a conclusion of obviousness include:

(A) Combining prior art elements according to known methods to yield predictable results;

(B) Simple substitution of one known element for another to obtain predictable results;

(C) Use of known technique to improve similar devices (methods, or products) in the same way;

(D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;

(E) "Obvious to try" – choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;

(F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art;

(G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

5. Claims 11, 15, 17, 18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Storm (US 5655841 A) in view of Burkle et al. (US 2004/0090985 A1).

Storm teaches the sensor system (Figure 16 and column 8, line 55 to column 9, line 10) using HART-standard sensors (Hart sensor highway 212) with converter box (200) connected to a signal line according to the Varec Mark/Space standard (Field highway 220). Storm does not teach another converter unit operating with a second data transmission technology with greater data transmission rate.

Burkle teaches the use of DSL data transmission technology over existing 2-wire copper wiring in paragraphs 0005-0006, wherein the DSL data transmission provides greater data transmission rate and does not interfere with the existing use of the 2-wire copper wiring (speeds of 144 Kbps to 1.5 Mbps in paragraph 0006). Storm uses copper wiring for the HART bus in column 12, lines 54-64. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a secondary DSL converter for transmitting the sensor data to the central acquisition center in Storm for the reason that a skilled artisan

would have been motivated to provide a higher speed transmission over existing wires that do not interfere with the existing use of the wires as taught by Burkle regarding DSL data transmission.

With respect to the filter units and splitter, Burkle teaches to provide filter units and splitters in order to provide DSL communication on the pre-existing copper lines (paragraphs 0005-0006, 0009-0010, 0035 and 0094-0095). Thus, it would have been obvious to provide filter units and splitters in Storm's copper HART bus in order to provide DSL communications as taught by Burkle.

With respect to the claims below, references to the prior art appear in parenthesis.

Claims

11. *(Currently amended) A process installation (Storm's sensor system in Figure 16) having:*

a control room (Central acquisition center associated with the Varec Mark/Space protocol in column 6, lines 13-16); and

a plurality of sensors (Sensors 204, 206, 210), which are connected via 2-wire lines ,e.g., according to the HART- standard (Hart sensor highway 212, wherein it would have been inherent or obvious to use 2-wire lines since the Hart standard is applicable to the connection wire between the sensor and converter 200), with a plurality of converter units (Storm teaches a single converter for converting from Hart to Varec Mark/Space); from which a signal line leads to said control room (Central acquisition center associated with the Varec Mark/Space 220); and

which exchange data for long distance first transmission technology with said control room via said signal line (Varec Mark/Space protocol is used for long distances to a central acquisition station in column 6, lines 13-16), wherein:

said signal line is designed for a conventional first data transmission technology according to an appropriate industry standard having a low data transmission rate (smaller than 10,000 baud) (Varec Mark/Space with 1200 baud in column 11, lines 37-51);

at least one converter unit, for data exchange, operates with a second data transmission technology, which permits a greater data transmission rate and/or an expanded functionality than the first transmission technology, and which uses, as a communication medium, the existing signal line, said converter units communicate with said control room according to the first data transmission technology or second data transmission technology (Burkle teaches the use of DSL data transmission technology over existing 2-wire copper wiring in paragraphs 0005-0006, wherein a skilled artisan would have been motivated to apply new technology that uses existing wires and do not interfere with the prior use of those wires so that the Varec Mark/Space converter can co-exist with a DSL converter using the existing copper wires in Storm);

the first and second data transmission technologies use separate data transmission channels occupying different frequency bands (DSL modems use different carrier frequency bands in paragraph 0021); and

the first data transmission channel occupies a frequency band up to 4 kHz (Storm uses frequencies 1200 Hz and 2200 Hz in column 11, lines 44-47), and the second data transmission channel occupies a frequency range greater than 4 kHz (Burkle teaches DSL frequencies from 3-7 MHz in paragraph 0089);

each of the converter units is provided with a filter unit, which filter the appropriate signals out and feed them to the field devices (Burkle teaches filter units to filter out NEXT/FEXT noise and RF interferes in paragraphs 0094-0095); and

in the control room, a splitter is provided in the signal line SL (Burkle teaches a splitter to split signals on the pre-existing copper phone lines in order to provide DSL communications in paragraphs 0005-0006, 0009-0010 and 0035).

15. (Currently amended) The process installation as claimed in claim 11, wherein: said signal line &E is a copper 2-wire line with a bandwidth of about 1 MHz (Burkle teaches DSL frequencies from 3-7 MHz in paragraph 0089 for use with existing 2-wire copper telephone wiring in paragraph 0005, wherein it would have been obvious to use the existing 2-wire copper line in Burkle for the copper wire in Storm since they are both copper communications line).

17. (Previously presented) The process installation as claimed in claim 11, wherein: said second data transmission technology corresponds to DSL (digital subscriber line) technology (Burkle teaches the use of DSL data transmission technology over existing 2-wire copper wiring in paragraphs 0005-0006) .

18. (Previously presented) The process installation as claimed in claim 11, wherein: the process installation, is a tank farm with a plurality of tanks LC1, LC2, LC3, LC4, LC5 for containing liquid (Storm teaches the use of the sensor system for remote gaging of storage tanks in column 1, lines 10-14).

21. The process installation as claimed in claim 11, wherein:

the industry standard is one of: Whessoematic WM550, Varec Mark/Space, Sakura VI, Tiway (Varec Mark/Space protocol is used for long distances to a central acquisition station in column 6, lines 13-16).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELVIN MARCELO whose telephone number is (571)272-3125. The examiner can normally be reached on Mon-Fri 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derrick W. Ferris can be reached on 571-272-3123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MELVIN MARCELO/
Primary Examiner
Art Unit 2463

September 25, 2011